



## Division of Surface Water Response to Comments

**Facility: Plain City WWTP**  
**Permit #: 4PB00016\*JD**

### **Agency Contact for this Project**

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Ohio EPA held a public comment period from May 24 to July 18, 2022 regarding Plain City WWTP (4PB00016\*JD). This document summarizes the comments and questions received during the associated comment period.

Ohio EPA reviewed and considered all comments received during the public comment period. The comments and responses are grouped by topic and summarized below.

1. **Numerous comments were received offering an objection to the expansion of Plain City WWTP, typically citing the high quality of Big Darby Creek, the uniqueness of the habitat and fauna, and the large number of recreational opportunities available. Below are a few excerpts:**
  - a. *I have spent many years enjoying Big Darby Creek and the opportunities it provides for recreation and learning – not to mention, it is home to diverse species of aquatic life. We must preserve and protect it.*
  - b. *The health of an ecosystem depends on species coexisting in a delicate balance. Removing key water filter species, the mussels, will degrade the quality of the water for all the species within the stream and along the stream. Our waterways and wetlands are fragile, special.*
  - c. *If approved, it would accelerate the degradation of central Ohio's highest quality stream: the Big Darby Creek. This creek is a national treasure, a hot spot of biologic diversity that cannot withstand the pollution that would result from increased wastewater effluent.*
  - d. *Our world is at a critical stage, and we should be doing everything possible to encourage healthy ecosystems. The creek is home to dozens of species which are already in decline. Please do your part to protect our planet.*
  - e. *Fresh clean water isn't guaranteed anywhere. If we have it, we have a duty is to use it wisely, enjoy it recreationally, but protect it! How can we possibly live with ourselves if we don't?*

Ohio EPA appreciates your participation in our public comment process. We recognize your passion for the Big Darby Creek and share your interests in protecting this valuable ecosystem, and we believe the NPDES permit will protect the quality of the stream.

## **Permit Renewal Process**

- 2. The antidegradation provisions of Ohio and federal law and regulations are not being properly applied to such a high-quality resource. These provisions of the CWA are designed to maintain existing water quality and prevent further degradation of such outstanding high-quality waters. Unfortunately, effective use of antidegradation provisions has been called a “neglected” part of the CWA (Glicksman and Zellmer 2013). In fact, Zellmer and Glicksman (2013) state that: “The nation’s environmental laws were adopted as much to preserve superior environmental quality as to restore damaged or degraded resources.” Big Darby Creek is objectively one of the most diverse and highest quality streams in Ohio as defined not only by its Exceptional Warmwater Habitat (EWH) aquatic life use, but also by its Outstanding State Resource Water antidegradation classification in the Ohio WQS. This latter classification takes into account factors in addition to the EWH designated use such as populations of State and Federally threatened and endangered species (e.g., fish, invertebrates and mussels) and assemblage attributes that are outstanding. Streams in Ohio that are Outstanding State Resource Waters should, by their very nature, require a substantially higher level of regulatory and technical scrutiny (i.e., scientific evidence) prior to allowing declines in water quality to occur in these waters. The proposed NPDES permit does just that by allowing for declines in water quality to accommodate “important social and economic development” without regard to the offsetting values of one of the highest quality resources in the state.**

The antidegradation provisions of Ohio and federal law and regulations were properly applied to the NPDES permit for Plain City. The NPDES permit includes conditions to ensure that the discharge from the Plain City WWTP is protective of threatened and endangered species and does not cause a loss of use in the Big Darby Creek, including all of the following:

- When conducting the modeling, additional protection was afforded to Big Darby Creek due to its designation as an Outstanding State Water in the form of a margin of safety referred to as a “set aside”. After applying the water quality criteria for EWH, OAC 3745-1-05(C)(6)(a) requires the application of a 70% set aside for Big Darby Creek. Please see Response 18 for more details.
  - The lowest limits in the state for total filterable residue, which are below Ohio’s numeric water quality criterion.
  - No additional loading authorized for phosphorus, ammonia, TSS and CBOD<sub>5</sub>.
  - A provision that requires immediate action if a WET test exceeds the wasteload allocation.
  - A thorough consideration of public comments that resulted in enhanced protections for certain terms and conditions in the permit.
- 3. Ohio EPA needs to adequately include and consider the combined impacts of wastewater and stormwater on Big Darby Creek and demonstrate that what is in place and proposed is adequate for restoration and protection needed before a permit is issued.**
    - a. Ohio EPA makes the claim that the permit review can only consider direct inputs from the WWTP, this approval would facilitate extensive**

**development within a stone's throw of Ohio's most biologically diverse remaining river system. Considering the full scope of potential consequences of this regulatory action is essential to protecting the health of this state and national scenic river.**

- b. The Ohio DNR Scenic Rivers program previously recommended that antidegradation review for this permit renewal include non-point source (NPS) pollution impacts associated with the urban and suburban expansion that will be facilitated by doubling WWTP treatment capacity, including chemical and hydrologic modelling. Modelling should occur to determine if the total pollutant load from the increasing plant treatment capacity and the associated NPS pollution will cumulatively have a negative impact on the biological and water quality of the Big Darby Creek including sensitive and rare and endangered species and freshwater mollusks.**

Modeling for the NPDES permit was done in accordance with OAC Chapters 3745-01 and -02. When conducting modeling for NPDES permits, NPS loadings are taken into account by the inclusion of background concentrations.

- 4. The Director's statement that Ohio EPA must allow lowering of water quality in Big Darby because of economic and social needs has not been elaborated in any way... How was the value of Big Darby Creek and its resources calculated? How was the value and need for Plain City to double its WWTP evaluated? Were past investments in Big Darby factored in, including the millions of dollars spent on land acquisition and planning by Metro Parks, the Darby Accord partners, and the state of Ohio, among others? How was the recreational value of Big Darby factored in? Because Big Darby is home to rare and endangered species, it is a national and state Scenic River, which adds value to the region and to Plain City itself. Was this factored into a calculation of economic and social equation in some way? We recommend that OEPA shed more light on the Director's decision on the economic and social need for this expansion so that public comments on this topic can be solicited and considered.**

As part of the antidegradation analysis, the Director considered the societal needs for growth along with anticipated impacts on water quality and how to best manage those impacts. In accordance with OAC 3745-1-05(C)(5), the Director considered the following factors as part of the Antidegradation review:

- The magnitude of the proposed lowering of water quality.
- The anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species, important commercial or recreational sport fish species, other individual species and the overall aquatic community structure and function.
- The anticipated impact of the proposed lowering of water quality on human health and the overall quality and value of the water resource.
- The degree to which water quality may be lowered in waters located within national, state or local parks, preserves or wildlife areas, waters listed as state resource waters in rules [3745-1-08](#) to [3745-1-30](#) of the Administrative Code, or

waters categorized outstanding national resource waters, outstanding state waters or superior high quality waters.

- The effects of lower water quality on the economic value of the water body for recreation, tourism and other commercial activities, aesthetics, or other use and enjoyment by humans.
- The extent to which the resources or characteristics adversely impacted by the lowered water quality are unique or rare within the locality or state.
- The cost of the water pollution controls associated with the proposed activity.
- The cost effectiveness and technical feasibility of the non-degradation alternatives, minimal degradation alternatives or mitigative technique alternatives and the effluent reduction benefits and water quality benefits associated with such alternatives.
- The availability, cost effectiveness, and technical feasibility of central or regional sewage collection and treatment facilities, including long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents.
- The availability, reliability and cost effectiveness of any non-degradation alternative, minimal degradation alternative or mitigative technique alternative.
- The reliability of the preferred alternative including, but not limited to, the possibility of recurring operational and maintenance difficulties that would lead to increased degradation.
- The condition of the local economy, the number and types of new direct and indirect jobs to be created, state and local tax revenue to be generated, and other economic and social factors as the director deems appropriate.
- Any other information regarding the proposed activities and the affected water body that the director deems appropriate.

Ohio EPA held a hearing on the antidegradation application on October 19, 2021, that included a question-and-answer session and where Ohio EPA solicited public comments on this topic.

**5. I do not understand why the City of Columbus cannot extend water and sewer treatment to Plain City.**

Plain City evaluated connection to Columbus, connection to Marysville, and expanding Plain City's existing WWTP to accommodate the growth that is occurring. Ultimately, Plain City decided the best phase 1 option was to expand their WWTP. Ohio EPA does not have the authority to force Plain City to connect to Columbus.

**6. We are aware that federal agencies, including the US EPA Region 5 office and the US Fish and Wildlife Service, will need to review and make recommendations on this draft permit. We strongly encourage their thorough review, especially concerning the assurance of protection of rare mussel species.**

Ohio EPA discussed the draft permit with and received comments from U.S. Environmental Protection Agency (U.S. EPA), U.S. Fish and Wildlife Service (U.S. FWS), and Ohio Department of Natural Resources (ODNR). Comments from these agencies are included and considered herein. Several changes to permit terms and conditions were made based on these recommendations.

## **Planning and Development**

7. Numerous comments were received requesting that Ohio EPA deny or hold the permit renewal until comprehensive, multi-jurisdictional planning for the development of the watershed is completed, often requesting the institution of requirements similar to those in the Big Darby Accord. Below are a few excerpts:

- a. *I believe that Big Darby Creek is an invaluable natural resource in Central Ohio, and I ask that the Ohio EPA takes all steps necessary to protect its unique biodiversity. I am aware that OEPA is currently reviewing a request to expand the Plain City wastewater treatment plan. I recommend that as part of this review, OEPA requires the same level of environmental planning in the Plain City area as was required in the Franklin County portion of the Big Darby watershed. In particular, this should include the creation of a stakeholder group to undertake comprehensive stormwater planning, as was required in Franklin County. State agencies and many other Darby partners have invested millions of dollars and countless hours in protecting this invaluable resource, so it is critical that new development in Madison County not undermine this investment.*
- b. *The Center for Biological Diversity encourages the Village of Plain City to begin the process of developing a robust Habitat Conservation Plan for the endangered mussels of Big Darby Creek. Specifically, the Habitat Conservation Plan should include a determination of the carrying capacity of the Big Darby Creek watershed. It should also include a land use plan map that identifies the safest areas for development and minimizes impacts to the watershed. Robust and adequate riparian setbacks, groundwater recharge, adequately protective conservation land acquisition and other appropriate and adequate measures also should be implemented as part of the Habitat Conservation Plan to ensure the protection of federally listed mussels and their habitat. The plan can also work in conjunction with a Clean Water Act Section 208 plan and other long-term multijurisdictional planning for the Big Darby Creek watershed, such as the Big Darby Accord.*
- c. *Brown Township's long dedication to the Big Darby watershed is why we are writing to urge the Ohio EPA to pause its' consideration of the Plain City WWTP permit application. The Board believes that such a pause would allow the communities in the watershed to work in concert with the Ohio EPA to formulate a plan and implementation regime. This would be consistent with Franklin County's efforts during the 208 plan and the Big Darby Accord planning processes and, as such, is a fair and responsible approach... Such a comprehensive look at this issue would allow all parties to work together to determine a way forward that is balanced between economic objectives and a desire to protect the watershed.*
- d. *The permit process must be suspended until the results of multijurisdictional planning and stormwater modeling can be completed and thoroughly evaluated in a transparent manner. The Big Darby Accord Watershed Master Plan, conducted by jurisdictions in the*

**Franklin County portion of the Big Darby Watershed, can serve as a model for that planning and analysis.**

- e. **While Plain City's Comprehensive Development Plan does include significant provisions for protecting Big Darby Creek, it is a plan, not enforceable policy. The Village has taken steps to implement some measures through revising their planning and zoning code, but those revisions have not yet been released for public comment or approved by Village Council. The permit should not be issued prior to new code approval to ensure that components that apply to water quality conservation are included.**

Ohio EPA agrees that there is a need to comprehensively plan for future expansion in the watershed. It is advisable for management agencies and stakeholders within the watershed to cooperatively hold larger discussions and Ohio EPA looks forward to being a part of the conversation. Ohio EPA anticipates these discussions occurring as part of a future facilities planning by the Village that will ultimately be reflected in future 208 plan updates. The expansion necessary to accommodate current capacity needs and development within its current boundaries is governed by the existing 208 requirements and the NPDES permit application was considered within those requirements.

8. **The planning area in the Comprehensive Development Plan is vast compared to current village incorporation limits. The current expansion (for which no service area map has been provided) conflicts with the existing 208 Plan, as would providing service to this larger planning area. We strongly encourage a Clean Water Act Section 208 plan be done now.**

The expansion of the Plain City WWTP from 0.75 MGD to 1.5 MGD is necessary to accommodate imminent and foreseeable growth within Plain City's existing corporate boundary. Because the expansion would allow growth to occur largely within Plain City's corporate limits, the 208 Plan does not need revised at this time. Ohio EPA agrees that the 208 Plan would need revised prior to any additional expansions.

9. **While Plain City's Comprehensive Development Plan does include significant provisions for protecting Big Darby Creek, it is a plan, not enforceable policy. The plan recommendation of fully adhering to the riparian setback in the General Permit for Construction Activity has already been violated twice by approved rezoning and preliminary development plans for construction of subdivisions within these limits.**
  - a. **Some components of the Comprehensive Development Plan lie outside of zoning code and do not have clear implementation mechanisms. The plan calls for greenspace conservation, including the protection of sensitive natural resources such as wetlands, woodlots and steep slopes. This goal is programmatic, and there is currently no plan with goals, timelines or resource allocations to guide implementation. The permit should not be issued prior to establishment of a greenspace conservation program.**

Ohio EPA agrees that Plain City's Development Plan would be more enforceable if incorporated into zoning code. However, Ohio EPA does not have the authority to

require that as an NPDES permit condition. The NPDES permit regulates the discharge of pollutants through a point source. NPDES rules and regulations do not support NPDES permits being used as a tool to guide city zoning codes or land use policies.

### **Effluent Monitoring and Limitations**

- 10. U.S. EPA published revised ammonia recommendation to states in 2013. Ohio still has not updated its ammonia criteria... Ammonia levels directly affect the endangered mussels of Big Darby Creek. We ask that Ohio EPA ensure that the ammonia limits in the permit are no less stringent than that recommended by US EPA in 2013.**

While it is true that Ohio has not updated the ammonia water quality criteria (WQC) to be consistent with the 2013 federal criteria, the proposed effluent limits are more restrictive than those that would result from use of either Ohio EPA's or U.S. EPA's ammonia criteria. Ammonia toxicity is dependent on both pH and temperature, the in-stream values for which are provided in Table 9 of the fact sheet. Considering the summer months as an example (using pH = 8.2 S.U, temperature = 25°C), the applicable criteria are:

Ohio EPA WQC (based on OAC 3745-1-35, Table 35-6) = 0.60 mg/L

U.S. EPA WQC (based on the 2013 Criteria document, Table 6) = 0.42 mg/L

The proposed limits (based on capping at the previously-permitted daily load) is 0.35 mg/L, which is more restrictive than either WQC. In addition, the calculation of a limit from either WQC would allow for a small amount of dilution from the Big Darby Creek, resulting in an even less restrictive limit.

Additionally, ammonia discharged in this range of concentrations is rapidly assimilated and oxidized, such that actual impacts downstream from point sources tend to be negligible, as is the case with Plain City under existing conditions. The proposed expansion is not likely to change that condition in a material way.

- 11. Treating to the low levels of ammonia without increasing the predicted load despite doubling of the effluent load will substantially increase nitrate loading to Big Darby Creek. Because of their unique and exceptional value, we strongly recommend the establishment of a nitrate limit for the Plain City NPDES permit and, at minimum, adequate monitoring of nitrate.**

Ohio EPA evaluated the toxicity of nitrite to mussel species relative to other macroinvertebrates and determined that other macroinvertebrates are equally or more sensitive to nitrite than mussels. A similar evaluation was done for nitrate, which indicated that nitrate is less toxic to mussels than nitrite. The permit includes requirements to monitor nitrate plus nitrite on a monthly basis following completion of the facility expansion. The proposed whole effluent toxicity testing and nitrate plus nitrite monitoring are sufficient to evaluate toxicity due to nitrite and/or nitrate in the Plain City WWTP effluent.

- 12. 40 C.F.R. § 136.5 allows for the State to request approval for an alternate test procedure for limited use. An alternate test procedure could use a determinative technique method specific to freshwater mussels which are more sensitive than the standard species outlined in 40 C.F.R. Part 136. U.S. EPA recommends that Ohio EPA consider requiring acute and chronic Whole Effluent Toxicity (WET) tests... for the species *Lampsilis siliquoidea*.**
- a. The final permit should be conditioned to require 7-day WET testing for a freshwater mussel... or other approved WET testing method for juvenile freshwater mussels. The testing should follow the same sampling schedule and sampling type as the *Ceriodaphnia dubia* and *Pimephales promelas* WET testing.**

Following a review of available information, Ohio EPA has determined that inclusion of WET testing with a mussel species would be inappropriate at this time. As noted, there is no approved method for WET testing with this species and, while recent studies show promise in method development, Ohio EPA believes the current state of mussel WET methods is not yet reproducible enough to generate consistently reliable results.

- 13. Given the presence of federally-protected species, the classification of the receiving waterbody as an outstanding state water based on exceptional ecological values, the designation of Big Darby Creek as an Exceptional Warmwater Habitat, and, as this Branch understands, that Ohio has not yet revised its numeric water quality criteria for ammonia to account for EPA's latest Clean Water Act section 304(a) criteria recommendations, Ohio EPA should establish acute and chronic whole effluent toxicity (WET) effluent limits in the permit.**

Ohio EPA has addressed each of these concerns in other areas of the permit:

- Identified parameters of concern for the federally-protected species based on technical data, public comments, and consultation with other regulatory agencies, and proposed effluent limits which would not authorize increased loading of those parameters of concern;
- Used Ohio's water quality criteria for Exceptional Warmwater Habitat in our parameter-specific reasonable potential analyses and then applied 70% load set-asides due to the Outstanding State Water designation; and
- Proposed effluent limits for ammonia that are more restrictive than the federal water quality criteria (see Response #10 above).
- Required new monitoring for whole effluent toxicity using *Ceriodaphnia dubia* and *Pimephales promelas*.

For additional protection, Ohio EPA proposes the addition of a Plant Performance Evaluation (PPE) condition which would be triggered if the facility were to produce WET results that exceed the WET wasteload allocation. A PPE consists of an evaluation of processes, inputs, and treatment, including but not limited to toxicity pass-through at the WWTP, chemicals used in the WWTP, and the effect of plant processes on WET discharged by the WWTP.

- 14. Ohio EPA's analysis of strontium demonstrated that it may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion of Ohio's water quality criteria for strontium at the facility's current design flow of 0.75 mgd. While this calculation was based on a single prior detection, there has been no subsequent testing of strontium. The draft permit does not contain numeric effluent limitations for strontium. According to 40 C.F.R. § 122.44(d)(1)(iii), when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant. As there is no additional data to show that strontium is absent from the discharge, EPA recommends that the draft permit contain monitoring and a water quality-based effluent limitations for strontium.**

Strontium was initially considered based on a sampling result collected by Ohio EPA in 2014. Ultimately, this parameter was excluded from the final reasonable potential analyses because it was collected outside of the data period considered for this permit, January 2017 through December 2021 (the most recent five years, in accordance with OAC 3745-2-04(d)(1)(1)), and Ohio EPA had already made a determination that this parameter was not a problem during the previous permit renewal in 2015. It would be inappropriate to use the same data in two separate reasonable potential analyses.

- 15. The draft permit contains maximum daily and average monthly limits for total filterable residue and dissolved hexavalent chromium. According to 40 C.F.R. § 122.45(d)(2), all permit effluent limitations for POTWs that discharge continuously shall be stated as average weekly and average monthly values, unless it is impracticable to express limits in this fashion. The draft permit, therefore, must include average weekly limitations in addition to the calculated average monthly limits for the parameters listed above, unless the record documents that it is impracticable to establish average weekly limits. Please be aware that the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) includes methods for transforming acute wasteload allocations into average weekly and average monthly effluent limitations and it includes methods for transforming chronic WLAs into limits expressed over the same durations.**

For dissolved hexavalent chromium, average monthly limits and daily maximum limits are proposed in accordance with OAC 3745-33-05(C)(1)(b). These limits are based on Ohio's chronic and acute water quality criteria, respectively. Including a daily maximum limit instead of a weekly average limit is more scientifically appropriate, more protective and is consistent with Ohio's rules.

For total filterable residue (often referred to as total dissolved solids or TDS), Ohio EPA has determined that it is impracticable to include a daily maximum or weekly average limit for TDS because Ohio does not have acute criteria and there is not a scientifically defensible way to translate Ohio's chronic criterion to an acute criterion.

- 16. TDS are composed of many individual ions...Recent toxicity testing suggests that freshwater mussels are more sensitive than many other aquatic taxa to two of these ions, chloride and sulfate. U.S. FWS recommends that the final permit should be conditioned to require monitoring of chloride and sulfate in the effluent... and at the upstream and downstream monitoring stations.**
- a. U.S. EPA recommends that the permit (1) require monitoring for these ions and (2) include a re-opener provision should Ohio EPA conclude, on review of monitoring data, that the discharge will cause, have a reasonable potential to cause, or contribute to an excursion beyond the State's water quality standards, including narrative water quality criteria.**

The U.S. EPA chloride Criterion Continuous Concentration (CCC; an estimate of the highest concentration in ambient water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable adverse effect) for mussels is 230 mg/L for chloride. The State of Michigan recently revised their chloride CCC for mussels to 150 mg/L. With the exception of the stream immediately downstream of the outfall, chloride concentrations are relatively consistent through the length of Big Darby Creek, averaging 40-50 mg/L along its 80-mile length, with values rarely exceeding 100 mg/L. Ohio has no water quality criteria for chlorides or sulfates to apply to Big Darby Creek and use in a reasonable potential analysis. With the proposed TDS limits that cap Plain City WWTP at their existing load, Ohio EPA does not anticipate that the additional effluent will result in toxic instream concentrations that would violate narrative water quality criteria. However, Ohio EPA proposes to add monitoring for chlorides and sulfates to the effluent and instream stations to develop a dataset for future evaluations.

- 17. The process to justify and permit the expansion of the Plain City WWTP has failed to adequately consider and address the particular sensitivity of mussels to contaminants of emerging concern (CECs; e.g., biologically active pharmaceuticals and personal care products) that recent studies have identified as potential stressors to freshwater mussels (see Jasinska et al. 2015). CECs are contaminants that are not substantially reduced with conventional wastewater treatment and these will inevitably increase with increases in effluent discharge volume. Some of these contaminants tend to sorb onto sediments and are of particular concern because mussels live in direct contact with these sediments.**

Over the last several decades, Ohio EPA has observed steady recovery of instream biological communities downstream of major publicly-operated treatment plants across the state, likely due to increased and improved treatment of conventional pollutants by the WWTPs. This occurred while the use and diversity of pharmaceutical and personal care products grew. Ohio EPA believes that the impact of these "non-routine" contaminants is negligible relative to conventional pollutants like TDS, ammonia, or BOD, which are proposed to be directly limited in the draft permit.

- 18. EWH water quality standards have not proven to be protective of Big Darby's most sensitive species, freshwater mussels. In particular, they have not been protective in the stretch below Plain City's current WWTP. In a new permit,**

**OEPA must calculate what further reduction in loading is needed to correct this problem.**

- a. A sufficiently protective, more conservative Margin of Safety must be established and emphasized even more because this discharge is to a high quality water with attributes, i.e., species presence, that are not necessarily protected by Water Quality Standards including Exceptional Warmwater Habitat criteria.**

Additional protection is afforded to Big Darby Creek due to its designation as an Outstanding State Water in the form of a margin of safety referred to as a "set aside". After applying the water quality criteria for EWH, OAC 3745-1-05(C)(6)(a) requires the application of a 70% set aside for Big Darby Creek. An example of a wasteload allocation calculation including a set aside is provided in Attachment 1 of the fact sheet. Analyses were conducted to determine if parameters in Plain City WWTP effluent had reasonable potential to exceed the wasteload allocation (after applying the set aside). This procedure resulted in proposed effluent limits for dissolved hexavalent chromium. For TDS and ammonia, *the proposed effluent limits are more restrictive than the EWH wasteload allocations with the 70% set aside.*

### **Ambient Monitoring and Endangered Species**

**19. The proposal does not have ambient monitoring requirements. If approved, how will you know the true impact if you don't measure?**

Ambient or in-stream monitoring is required by the draft permit at stations 801 (upstream) and 901 (downstream). Specifically, upstream monitoring is conducted at McKittrick Park and downstream monitoring is conducted at the bridge on Cemetery Pike.

- 20. The proposed draft NPDES permit lacks sufficient ambient monitoring requirements. Despite the significance and sensitivity of Big Darby Creek, there is no requirement for instream biological monitoring (fish, macroinvertebrates, and mussels) which would be valuable given the uncertainties of adverse impacts under expanded WWTP capacity.**
- a. The permit should include a requirement for regular instream biological monitoring (fish, macroinvertebrates, and mussels) downstream and upstream of Plain City and the wastewater treatment plant.**
  - b. The final permit should be conditioned to require a freshwater mussel survey be conducted within 24 months of permit issuance, following the "Ohio Mussel Survey Protocol"**

The draft permit includes biomonitoring of the effluent and upstream monitoring station. As noted above, Ohio EPA investigated the feasibility of biomonitoring using a mussel species and determined its inclusion is inappropriate. Ohio EPA proposes to require the submission of a study plan for a survey of mussel populations in Big Darby Creek.

**21. There is also a need for appropriate ambient monitoring for eutrophication resulting from the inevitable increased nutrient loadings using the nutrient effect assessment procedures of Ohio EPA.**

- a. **We strongly recommend.... downstream monitoring of nitrate and monitoring to assess eutrophication using the Ohio EPA Stream Nutrient Assessment Procedure. This should include a frequency greater than quarterly (especially under low summer stream flows).**

Phosphorus is typically the limiting nutrient in freshwater systems and the draft permit includes proposed limits that do not authorize increased loading of total phosphorus. This total phosphorus limit is consistent with the wasteload allocation assigned to Plain City WWTP in the 2006 Big Darby Creek Total Maximum Daily Load report. The draft permit also includes nutrient monitoring at the instream monitoring stations to supplement the ambient monitoring procedures that Ohio EPA will implement to best evaluate enrichment in the Big Darby Creek. To develop a better dataset for future evaluations, Ohio EPA proposes to increase the monitoring frequency of nutrients in the up- and downstream monitoring stations after completion of the expansion project.

22. **The ambient chemical monitoring for ammonia (quarterly) is inadequate. It is well known that ammonia is a critical parameter of concern for mussels, but it is also important for the highly intolerant fish species (e.g., streamline chub) that, based on field-based relationships, are as sensitive as mussels (Rankin and Armitage 2008).**

Ohio EPA proposes to increase the frequency of instream monitoring for ammonia upon completion of the WWTP expansion. Though Ohio EPA does not anticipate that the proposed effluent limits will result in toxic instream concentrations, this monitoring will provide a better dataset for future evaluations.

23. **The Endangered Species Act prohibits take of federally listed species. Ohio EPA should not issue any new permits until a take permit is issued and a Habitat Conservation Plan is drafted. A Habitat Conservation Plan can minimize and mitigate the impacts of any planned development on federally listed species.**

It is Ohio EPA's understanding that U.S. FWS does not have sufficient data to determine whether Plain City WWTP is responsible for the take of endangered species. Additional monitoring is proposed based on recommendations from U.S. FWS to facilitate this determination.

### **Compliance Schedule**

24. **Part I, C of the permit is labeled, "Compliance Schedule". The substance is directed into two basic elements: (1) a schedule leading to compliance with new effluent limits for hexavalent chromium and total filterable residue and (2) a date after which certain concentration-based effluent limitations are reduced by one-half. Ohio EPA set the limits in (2) for the time after which the average design flow of the plant increases from 0.75 to 1.5 million gallon per day (mgd). The permit properly labels element (1) as a compliance schedule in that it (purportedly; see next paragraph) provides remedial measures for compliance with the hexavalent chromium and total filterable residue effluent limitations and the underlying water quality standards. "Compliance schedule" is not the**

**best label to apply to element 2) in that the permit does not provide remedial measures for requirements in an interim period and such measures are not necessary given the circumstances. OEPA should reframe element (2) in the context of the discharge authorization statement on page one of the permit. In such a reframing, the permit would authorize average discharge up to 0.75 mgd from the effective date of the permit to 36 months after the effective date, and separately authorize average discharge up to 1.5 mgd beginning 37 months after the effective date. Secondary benefits of a reframing are that (1) OEPA need not conceive of and set interim milestones under 40 C.F.R. § 122.47(a)(3) and set reporting requirements under (4) for the period prior to the effective date of the reduced concentration-based limitations and (2) the current disharmony between the 18-month schedule in the Permit-to-Install and 36-month schedule in the NPDES permit is eliminated.**

Ohio EPA proposes to make changes to Part I,C such that the schedules for attainment of the effluent limits based on reasonable potential and those based on the WWTP expansion are separated.

- 25. Milestones in the draft permit applicable to months 12, 24, 36, and 48 are confined to reports of status. A requirement for such reports meets § 122.47(a)(4) but not (3). OEPA needs to revise the schedule to identify the practical steps Plain City must complete by months 12, 24, 36, and 48 on the path to compliance with the hexavalent chromium and residue effluent limitations at months 36 and 59, respectively. Given the nature of these pollutants, the milestones should focus on source reduction in the collection system including, but not necessarily limited to, the establishment and application of local limits to users of the collection system.**

OAC 3745-33-05(G)(2) identifies the submission of information, reports, or documents as acceptable milestone requirements in a compliance schedule.

- 26. We (U.S. FWS) agree that limiting TDS loading to Big Darby Creek is important in maintaining healthy aquatic life. We recommend modifying the permit so the facility addresses TDS limits within 37 months (three years) after the effective date of the permit (i.e., when the WWTP expansion and upgrade are completed).**

Ohio EPA has been engaged with the permittee discussing potential strategies for compliance with this limit. The solution is likely to be a significant source reduction action which will take considerable time for both planning and implementation, such as switching to an alternative drinking water source. Compliance with this limit is required as soon as possible but it is likely that the Village will need several years.

### **In Favor**

- 27. Plain City is not immune to the housing market pressures. Growth is coming to Plain City and its immediate vicinity. The Building Industry Association of Central Ohio (BIA) believes that residential development demand in the central Ohio area means that Plain City and the surrounding area will receive new housing. The Plain City area is a very desirable place to live. Plain City's**

**geographic location will result in continued residential demand. Access to centralized sewer, and an accompanying comprehensive sewer treatment plant, has always been and continues to be the preferred development option for the BIA and our members. The combination of economic growth in our region, the existing challenges with Plain City's facility, and the BIA's commitment to central sewer options lead us to support this draft permit.**

- a. Central Ohio is a pretty good place to live, and that's the reason that growth and demand continue to occur. It is also my belief that if done properly, development can be a benefit for the environment and the conditions from both the Ohio EPA and the various stormwater controls address those things, and the requirements continue to get more and more stringent. I believe that growth and development are coming, so it's best to deal with it in a manner such that it becomes a benefit for both the citizens and the environment.**
- b. Ohio must absolutely be developed economically and grow into a place people want to stay in and move to. I love my state. One of the reasons is that it's beautiful in all four seasons, and nature/wildlife is never far.**
- c. I've heard a lot of conversation about the expansion and the volumes. What I haven't heard anything about is our plant today, and what happens today with our antiquated plant when we have huge rain events, and we're actually dumping solids into the Big Darby. These upgrades are (1) needed and necessary and (2) at the end of the day it's my hope that the Big Darby benefits from this effort.**

Ohio EPA agrees that centralized treatment is the most effective, efficient method of wastewater management. Even prior to further development in the Plain City area, Plain City WWTP has reached, and at times exceeded, its design capacity. Additional capacity is needed to accommodate further development.

### **Other**

**28. (There is a particular concern regarding) An increased ecological risk created as the percent effluent in Big Darby Creek downstream from Plain City under critical low flow periods that increases from the current 65% as effluent (at the 0.75 MGD design flow) to 82% as effluent under a proposed 1.5 MGD interim design flow and increasing to 91% as effluent under the proposed 3.0 MGD final design flow.**

Ohio's rules regarding reasonable potential analyses incorporate use of these critical low flows so that limits are protective of nearly all flow conditions. Based on Ohio EPA's analysis, the Plain City WWTP effluent will constitute approximately 80% of the Big Darby Creek flow during the lowest-flow day in a 10-year period (1Q10). According to Ohio's rules, maximum wasteload allocations must be protective of this rare flow condition, so that the wasteload allocation is protective of all flow conditions. Similarly, the average wasteload allocations must be protective of the lowest 7-day span in a 10-year period (7Q10). Plus, the wasteload allocations for Plain City are more conservative than above due to the 70% set-aside afforded by Big Darby Creek's designation as an Outstanding State Water (see Response 18). Lastly, the proposed limits for TDS and ammonia based on Ohio EPA's approach of

capping loads are *more restrictive* than the wasteload allocations that are calculated using water quality criteria, critical low flows, and set-asides.

Ohio EPA has not received – and does not anticipate receiving – a request to expand to 3.0 MGD. Further expansion beyond the current proposal of 1.5 MGD would likely result in unattainable limits (based on Ohio EPA's proposed approach of capping loads).

- 29. (There is a particular concern regarding) The failure to address the recent history of exceedances of the ammonia and total suspended solids NPDES permit limits at the Plain City WWTP.**
- a. With Plain City's history of ammonia violations, which may be a contributing factor to fewer and less sensitive mussels living close to the WWTP's effluent, extra precautions are necessary so that these large investments are not lost to unmanaged urban growth.**
  - b. Historically, Plain City's wastewater plant performance has degraded the biota of Big Darby Creek. We remain very concerned about facility aging and the long-term consequences of decline in treatment performance.**
  - c. We've seen already from this particular plant that levels of ammonia and total suspended solids have exceeded permitted levels, and no action has been taken to correct the excess.**
  - d. During low flow in late summer when dissolved oxygen levels are most likely to drop to unsustainable levels for wildlife, the effluent from the expanded WWTP will far exceed the natural flow of Big Darby Creek, most likely exceeding 80 percent of the flow. Taking Plain City's record of WWTP failures, the likelihood of animal die-offs is high.**

Between September 2018 and May 2020 (a period of 21 months), Plain City WWTP recorded 108 effluent violations, which is unacceptable. The facility was issued numerous Notices of Violation and placed in Significant Noncompliance. The failings of this period caused Plain City to change the operations, maintenance, and management practices at the WWTP. As a result, Plain City WWTP has recorded only 8 effluent violations since June 2020 (24 months) and is no longer in Significant Noncompliance. Ohio EPA is satisfied with the improved operations at the facility and believe that expanded capacity and improvements to existing infrastructure will facilitate even better performance.

- 30. Has the permittee or Ohio EPA considered use of wetlands or similar settling structures to decrease the speed and volume at which effluent water enters the creek? With hundreds of millions of federal and state EPA dollars already having been spent on restoration projects in both upstream and downstream habitats and tributaries of Big Darby Creek, a joint commitment to a green infrastructure project to accommodate at least some of the effluent of the treatment plant seems feasible and prudent.**
- a. Even if the expanded WWTP is operated competently, it is well-documented that streams degrade as the percentage of impervious surfaces increase in a watershed, even with BMPs in place. One of the biggest issues in Big Darby Creek has been the increasing flashiness of the flow regime. Many of the best mussel beds have been scoured out**

**in the lower Big Darby Creek, resulting in the loss of rare mussels. The mussels and fish have fared better in the vicinity of the metro parks, where riparian areas have been protected and improved.**

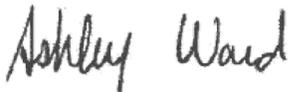
The current outfall at Plain City WWTP includes a post-aeration cascade, which serves as an effluent calming structure. The proposed plans include additional cascade capacity to aerate and calm the additional flow.

**31. In response to comments regarding categorizing Big Darby Creek as an Outstanding National Resource Water, the Ohio EPA stated that “Per OAC 3745-01-05 (E)(2), at least once every three years, the Director shall, in consultation with the Director of the Department of Natural Resources, consider available information on water bodies in Ohio and determine appropriate high quality water categorizations. The Scenic Rivers program strongly supports this designation and asks to be notified of the schedule for when this review will occur.**

An update to the high quality water categorizations is among Ohio EPA’s highest water quality standards rulemaking priorities. We will engage the Department of Natural Resources when that effort is underway. Ohio EPA’s rulemaking process also has several opportunities for public comment.

**End of Response to Comments**

Sincerely,



Ashley Ward, P.E.  
NPDES Manager  
Division of Surface Water

AW/DB

cc: John Owen, Ohio EPA – DSW/CDO  
permit file 4PB00016